



## RISK FACTORS FOR HYPERTENSION DURING PREGNANCY AT THE MOTHER RINI CLINIC, SUNGGAL DISTRICT, MEDAN CITY NORTH SUMATRA PROVINCE 2024

Laila Anisa Zamna<sup>1</sup>, Imran Saputra Surbakti<sup>2</sup>, Mesrida Simarmata<sup>3</sup>, Syamsuarni<sup>4</sup>,  
Zahara Herani<sup>5</sup>, Dea Nuarista Parangin-angin<sup>6</sup>, Iqra Manisah<sup>7</sup>

<sup>1,2,3,5,6,7</sup>Sekolah Tinggi Ilmu Kesehatan Mitra Husada Medan  
<sup>4</sup>Mother Clinics in Medan

Email: [2319201691@mitrahusada.ac.id](mailto:2319201691@mitrahusada.ac.id), [imransurbakti@mitrahusada.ac.id](mailto:imransurbakti@mitrahusada.ac.id),  
[mesridasimarmata@mitrahusada.ac.id](mailto:mesridasimarmata@mitrahusada.ac.id), [samsuarni@mitrahusada.ac.id](mailto:samsuarni@mitrahusada.ac.id),  
[2319201082@mitrahusada.ac.id](mailto:2319201082@mitrahusada.ac.id), [deanuarista@mitrahusada.ac.id](mailto:deanuarista@mitrahusada.ac.id),  
[2119201040@mitrahusada.ac.id](mailto:2119201040@mitrahusada.ac.id)

### ABSTRACT

**Introduction:** Hypertension in pregnancy is a very dangerous condition if it occurs in pregnant women because it can cause preeclampsia, preterm birth, fetal growth disorders, respiratory syndrome and fetal death. **Objective:** to analyze the incidence of hypertension in pregnancy at the Bunda Rini Clinic in 2024. **Population and Sample:** all pregnant women who came to visit the Bunda Rini Clinic during 2023 as many as 30 pregnant women. with a total sampling technique of 30 people. **Place and time:** at the Sally Clinic, Tembung on month April– July 2024. **Results :** Univariate : majority age 20-335 year as many as 18 people (60%) people, the majority of high school education as many as 15 people (50%), the majority of housewives as many as 28 people (88.8%), parity as many as 21 people (70%). Bivariate: Respondents suffering from pregnancy hypertension came from ages > 20 years and > 35 years. The chi square statistical test is p value = 0.000. The Relationship of Nutrition with Pregnancy Hypertension of 8 people (27%) pregnant women with pregnancy hypertension, the majority with malnutrition as many as 6 people (20%), the chi square statistical test is p value = 0.018 then the P value of age and nutrition is the same < 0.05 indicates there is a relationship between age and nutrition with the incidence of hypertension. In terms of parity as many as 8 people (27%) with the majority of multiparous parity. The chi square statistical test is p value = 0.363 which This means that p>0.05 indicates that there is no relationship between the incidence of hypertension and the incidence of pregnancy hypertension. **Conclusion:** There is a relationship between age and nutrition in the incidence of hypertension and there is no relationship between parity and the incidence of pregnancy hypertension.

**Keywords:** Factors, Pregnancy Hypertension; Pregnant mother

### Introduction

High blood pressure, also known as hypertension, is a very dangerous condition for pregnant women because it can lead to preeclampsia, preterm birth, fetal growth retardation, respiratory syndrome, and fetal death (Aryani et al., 2021) . Many things can happen to both the pregnant woman and

the fetus when gestational hypertension occurs, such as impaired fetal development, which can lead to abortion or premature birth. All of this is an emergency for pregnant women. According to Silaban et al., in 2024, the majority of mothers lack knowledge of emergency treatment for pregnant women (Silaban et al., 2023).



Approximately 14% of maternal deaths are caused by gestational hypertension, accounting for 5% of these deaths, according to WHO 2021 data (Kontesah et al., 2023) . In 2013, the International Association of Obstetricians and Gynecologists (OBGYNs) published data showing that hypertension in pregnant women was 140 mmHg systolic and 90 mmHg systolic. The incidence of hypertension in pregnancy is 5.2% - 8.2%, gestational hypertension 1.8% - 4.4%, and preeclampsia 0.2% - 9.2% (Laksono and Masrie 2022). In Medan, the incidence of hypertension is 7,174 people suffering from hypertension at the Mandala Health Center 4.483 (Tumanggor, Aktalina, and Yusria 2022). At the Bunda Rini Clinic in Sunggal District, during January-May 2024, 30 people were seen, some of whom were treated and some were referred to the hospital.

Many factors cause hypertension in pregnancy, namely maternal age, maternal parity, multiple pregnancies, history of diabetes mellitus (Laksono & Masrie, 2022) . Hernida 2020 in Bengkulu said that the majority of hypertension cases in pregnant women are at risk age and the majority in mothers with a history of hypertension and the majority have less knowledge (Hernida, Nuru, and Darmawansyah 2022). According to Dayani in Lampung, there is a relationship between age, parity and pregnancy history in the occurrence of hypertension in pregnancy (Dayani and Widayantari 2023). According to Kontesah et al. in 2023 also said that in addition to age, parity and history of hypertension, stress can also cause hypertension in pregnancy (Kontesah et al. 2023). In addition, according to Carolin in 2024 in South Jakarta, the triggering factor for hypertension in pregnancy is weight gain, namely the

majority in obese pregnant women (Septimiar, Rustami, and Wibisono 2020).

According to Syam (2023), nutritional status, specifically a lower-than-normal maternal MUAC, can influence the occurrence of hypertension during pregnancy (Rahmadini et al. 2023). Body mass index (BMI) is also a trigger for hypertension in pregnant women (Simanjuntak, Resti, and Margareth 2023).

The pathophysiology of gestational hypertension occurs due to inappropriate trophoblast differentiation due to endothelial invasion due to abnormal regulation that causes abnormal remodeling of the spiral arteries in the endometrium, resulting in hypertension in pregnancy (Laksono and Masrie 2022). From another theory, body mass index affects the occurrence of pregnancy because adipose tissue that accumulates under the skin increases heart performance, resulting in increased blood pressure (hypertension) (Simanjuntak et al. 2023).

The most desirable treatment is routine blood pressure measurement in pregnant women to detect hypertension early and can be treated before it endangers the mother and fetus (Laksono and Masrie 2022). If hypertension occurs during pregnancy, treatment is by consuming blood pressure-lowering medication, namely nifedipine 10 mg 3x daily (Laksono & Masrie, 2022) . In addition to taking medication, a healthy lifestyle is recommended, not doing heavy work and leaving problems that cause stress (Septimiar et al., 2020) . Treatment of hypertension in pregnancy with local food, namely chayote (Rufaidah et al., 2023) . From the results of a survey at the Bunda Rini clinic, Sunggal District, from January to May, 10 pregnant women were found to have hypertension out of a total of 30 pregnant women. Based on the results of this study, researchers are interested in



examining the Risk Factors for Hypertension in Pregnancy at the Bunda Rini Clinic, Sunggal District, Medan City, North Sumatra Province. 2024

### Research Method

This research is a *Descriptive Correlative type* with a *Cross Sectional Study approach*, namely to see the relationship between the *Dependent Variable (Hypertension)* and independent (age, number of pregnancies, nutritional status, history of hypertension). The population is the object of the research conducted. The population of this study is all pregnant women who came to visit the Bunda Rini Clinic during 2023 as many as 30 pregnant women. The research sample is all or part of the population. The sample of this study is *total sampling*, namely (30 people) all pregnant women who visited

*Ante Natal Care (ANC)* to the Bunda Rini clinic during January to December 2023. The location of the research was carried out at the Bunda Rini clinic from April to July 2024. Data collection used a Checklist sheet which consisted of respondent number, age, parity, occupation, parity, LILA using a checklist instrument and data analysis to find the relationship of age, nutrition, parity with the incidence of hypertension using the SPSS Chi square test. If the P value is  $<0.05$  then there is no relationship, if  $>0.05$  then there is a relationship between the independent variable and the dependent variable.

### Result

Research results

Age

The characteristics of the sample in this study are as follows:

**Table 1. Distribution Frequency Respondent Characteristics**

Variables	Amount	Percentage	Variables	Amount
<b>Age</b>			<b>Age</b>	
>20 years	5	17	>20 years	5
20-35 Years	18	60	20-35 Years	18
>35 Years	7	23	>35 Years	7
<b>Total</b>	<b>30</b>	<b>100</b>	<b>Total</b>	<b>30</b>
<b>Parity</b>			<b>Parity</b>	
Primipara	11	37	Primipara	11
Multipara	19	63	Multipara	19
<b>Total</b>	<b>30</b>	<b>100</b>	<b>Total</b>	<b>30</b>
<b>Nutritional status</b>			<b>Nutritional status</b>	
12	40		12	
Not enough	18	60	Not enough	18
Good	<b>30</b>	<b>100</b>	Good	<b>30</b>
<b>Total</b>			<b>Total</b>	
<b>History of Hypertension</b>			<b>History of Hypertension</b>	
Yes	11	37	Yes	11
No	19	63	No	19
<b>Total</b>	<b>30</b>	<b>100</b>	<b>Total</b>	<b>30</b>

Gestational Hypertension		Gestational Hypertension	
<b>Hypertension</b>	22	<b>Hypertension</b>	22
No	8	No	8
Yes	27	Yes	

From the results of table 1, the respondents who were most Lots with range age 20-30 year as many as 18 people (60%) people , The majority of education was high school, 15 people (50%), the majority of occupations were housewives, 28 people (88.8%), and parity was 21 people (70%).

#### 4.2 Bivariate Analysis

The Relationship between Age and Gestational Hypertension  
 Connection age and gestational hypertension.

A chi-square test was conducted to assess the relationship between respondent age and gestational hypertension as shown in the following table:

**Table 2. Connection age with the incidence of hypertension in Mother pregnant**

Age	Gestational Hypertension		Total	P. ue	Val
	No	Yes			
<20 years	3	10	13	5	17
20-35 years	18	60	78	18	60
>35 years	1	3	4	7	23
Total	22	73	95	30	100

Based on table 2, it can be seen that the majority of respondents aged 20-35 years did not experience gestational hypertension. From the data, we can see that 8 people (27%) of respondents with gestational hypertension were aged >20 years and >35 years. The chi square statistical test is p-value = 0.000. means

p<0.05 which means there is a relationship between age and gestational hypertension. Connection Nutritional Status with Gestational Hypertension

A chi-square test was conducted to assess the relationship between respondents' nutritional status and gestational hypertension as shown in the following table



**Table 3 Relationship between Nutritional Status and the Incidence of Gestational Hypertension**

Nutritional status	Gestational Hypertension				Total	P.Value
	No	Yes				
Poor	6	20	6	20	12	40
Good	16	53	2	7	18	60
Total	22	73	8	27	30	100

From table 3, it can be seen that of the 8 (27%) pregnant women with hypertension, the majority were malnourished, as many as 6 (20%). The chi-square statistical test showed a p-value of 0.018. means  $p < 0.05$  which means there is a relationship between the nutritional status of pregnant women and the incidence of gestational

hypertension at the Bunda Rini Clinic in 2024.

#### Connection Parity With Gestational Hypertension

A chi square test was conducted to assess the relationship between parity and gestational hypertension as shown in the following table:

**Table 4. The relationship between parity and the incidence of hypertension in Mother pregnant**

Parity	Gestational Hypertension				Total	P. Value
	No	Yes				
Primipara	9	30	2	7	11	37
Multipara	13	43	6	20	19	63
Total	22	73	8	27	30	100

## Discussion

Based on Table 4, it can be seen that 8 respondents (27%) experienced gestational hypertension, with the majority being multiparous. The chi-square statistical test showed a p-value of 0.363. This means  $p > 0.05$ , which means there is

no relationship between parity and the incidence of hypertension during pregnancy at the Bunda Rini Clinic in 2024.



### Relationship between age and gestational hypertension

Based on table 6, it can be seen that the majority of respondents aged 20-35 years did not experience gestational hypertension. From the data, we can see that 8 people (27%) of respondents suffering from gestational hypertension were aged >20 years and >35 years. The chi square statistical test is  $p\text{-value} = 0.000$ . means  $p < 0.05$  which means there is no relationship between age and gestational hypertension.

Previous research has shown that women with gestational hypertension are at higher risk, namely those aged <20 years and >35 years (Dayani & Widyantari, 2023). Other research suggests that those aged <35 years and older tend to be obese, making them more susceptible to developing gestational hypertension because they have successfully managed the disease (Laksono and Masrie 2022). Other research suggests that younger women are at higher risk of developing gestational hypertension (Rahmawati and Kasih 2023). Other research is related to hypertension to parity (Isnovidiana, Simanullang, and Manullang 2024).

Researchers assume that the research results of all pregnant women who experience pregnancy hypertension are at risk of age, <20 years and > 35 years.

### The Relationship Between Nutritional Status and Gestational Hypertension

From table 6, it can be seen that of the 8 (27%) pregnant women with hypertension, the majority were malnourished, as many as 6 (20%). The chi-square statistical test showed a  $p\text{-value}$  of 0.018. means  $p < 0.05$  which means there is a relationship between the nutritional status of pregnant women and the

incidence of gestational hypertension at the Bunda Rini Clinic in 2024.

The results of this study align with previous research that found poor nutritional status is a triggering factor for gestational hypertension (Syam et al. 2023). Other research also suggests a similar correlation between nutritional status and the incidence of gestational hypertension. Obese pregnant women are at greater risk of developing gestational hypertension (Rahmadini et al., 2023) . (Cindy et al. 2023).

Researchers assume that nutrition plays a major role in the occurrence of hypertension during pregnancy because poor nutrition will disrupt the nutritional support of the baby, plus the endothelium of the myometrial spiral blood vessels will experience ischemia, which will further worsen the condition of the mother and fetus.

### The Relationship Between Parity and Gestational Hypertension

Based on Table 6, it can be seen that 8 respondents (27%) experienced gestational hypertension, with the majority being multiparous. The chi-square statistical test showed a  $p\text{-value}$  of 0.363. This means  $p > 0.05$ , which means there is no relationship between parity and the incidence of hypertension during pregnancy at the Bunda Rini Clinic in 2024.

The results of this study align with previous research that found no association between parity and the incidence of gestational hypertension. All pregnant women, both primigravida and multigravida, can suffer from gestational hypertension (Kontesah et al. 2023). It is correlation hipertensi gravidarum to parity (Isnovidiana et al. 2024). Other research also suggests that gestational hypertension



tends to occur in first pregnancies and pregnancies with subsequent pregnancies. Researchers assume that primigravida and multigravida parity have the same chance of developing gestational hypertension, so HIV testing needs to be carried out starting from 28 weeks of pregnancy.

### Conclusion and Suggestion

A relationship was found between age and nutritional status and the development of gestational hypertension. Parity was not associated with the development of gestational hypertension, as hypertension can occur in pregnant women at any time.

### Acknowledgements

Thank you to STIKes Mitra Husada Medan for providing the facilities and infrastructure to carry out this research and I also thank the head of the Bunda clinic who has permitted this research location and I also would like to thank the pregnant women at the Bunda clinic who have been willing to be respondents in this research.

### References

Aryani, Ni Putu, Baiq Ricca Afrida, and Susilia Idyawati. 2021. "Studi Kasus Hipertensi Dalam Kehamilan." *Jurnal Of Fundus* 1(1):22–29.

Cindy, Y. N., Nur Azizah, Rosmani Sinaga, Syke Sheila Putri, and Roulina Silalahi. 2023. "Hubungan Perilaku Konsumsi Zat Besi Dengan Kejadian Anemia Pada Ibu Hamil Di Klinik Sri Pamela Aek Nabara Kabupaten Labuhan Batu Kecamatan Bilah Hulu." *ANJANI Journal* 3(2):72–78.

Dayani, Tiara Rica, and Kadek Yuke Widhyantari. 2023. "Faktor Yang Berhubungan Dengan Kejadian Hipertensi Pada Ibu Hamil." *Journal of Language and Health* 4(1):1–10.

Hernida, Ita, Hasanudin Nuru, and Darmawansyah Darmawansyah. 2022. "Faktor –Faktor Yang Berhubungan Dengan Hipertensi Pada Kehamilan Di Wilayah Kerja Puskesmas Padang Tepong Kecamatan Ulu Musi Kabupaten Empat Lawang." *Jurnal Kebidanan Manna* 1(2):75–88. doi: 10.58222/jkm.v1i2.175.

Isnoviliana, Isnoviliana, Ester Simanullang, and Rasmi Manullang. 2024. "Faktor Faktor Yang Mempengaruhi Terjadinya Hipertensi Pada Ibu Hamil Di Puskesmas Peureulak Aceh Timur Tahun 2024 STIKes Mitra Husada Medan , Indonesia Profil Kesehatan Provinsi Sumatra Utara Kematian Ibu." *Inovasi Kesehatan Global* (4).

Kontesah, Julia, Reni Fitria, and Astuti Ardi Putri. 2023. "Faktor-Faktor Yang Berhubungan Dengan Kejadian Hipertensi Pada Ibu Hamil Di Wilayah Kerja Puskesmas Sungai Dareh Kabupaten Dharmasraya." *MAHESA : Malahayati Health Student Journal* 3(10):3117–30. doi: 10.33024/mahesa.v3i10.11001.

Laksono, Sidhi, and Marshaly S. Masrie. 2022. "Hipertensi Dalam Kehamilan: Tinjauan Narasi." *Herb-Medicine Journal* 5(2):27. doi: 10.30595/hmj.v5i2.13043.

Rahmadini, Annisa Fitri, Fitria Lestari, Imas Nurjanah, Iik Iklimah, and Shafa Salsabila. 2023. "Faktor - Faktor Yang Menyebabkan Hipertensi Pada Ibu Hamil." *Journal of Public Health Innovation* 3(02):205–13. doi: 10.34305/jphi.v3i02.718.

Rahmawati, Rahmawati, and Rosdina Permata Kasih. 2023. "Hipertensi Usia Muda." *GALENICAL : Jurnal Kedokteran Dan Kesehatan Mahasiswa Malikussaleh* 2(5):11. doi: 10.34305/jphi.v3i02.718.



10.29103/jkkmm.v2i5.10478.

Rufaidah, Anne, Uci Ciptiasrini, and Shinta Mona Lisca. 2023. "Efektivitas Pemberian Labu Siam Terhadap Hipertensi Pada Ibu Hamil Di Puskesmas Sukahurip Kabupaten Garut Tahun 2023." *SENTRI: Jurnal Riset Ilmiah* 2(10):4118–30. doi: 10.55681/sentri.v2i10.1650.

Septimar, Zahrah Maulidia, Muhamad Rustami, and A. Y. Wibisono. 2020. "Jurnal Menara Medika <Https://Jurnal.Umsb.Ac.Id/Index.Php/ Menaramedika/Index> JMM 2020 p-ISSN 2622-657X, e-ISSN 2723-6862." *Jurnal Menara Medika* 3(1):66–73.

Silaban, Jojor, Risdiana Melinda Naibaho, and Verawaty Fitrielda Silaban. 2023. "Pengetahuan Ibu Hamil Tentang Penanganan Kedaruratan Eklampsia Pada Ibu Hamil Di Rumah Sakit Umum Daerah Sidikalang." *Jurnal Maternitas Kebidanan* 8(1):89.

Simanjuntak, Netti Meilani, Suci Nanda Resti, and Friska Margareth. 2023. "Perbedaan Indeks Massa Tubuh Pada Ibu Hamil Hipertensi Dengan Normotensi." *Oksitosin: Jurnal Ilmiah Kebidanan* 10(1):33–41. doi: 10.35316/oksitosin.v10i1.2382.

Syam, Andi Nurfadilah, Andi Tihardimanto, Asrul Abdul Azis, Jelita Inayah Sari, and Sabir Maidina. 2023. "Faktor Yang Berhubungan Dengan Kejadian Hipertensi Pada Ibu Hamil." *Ibnu Sina: Jurnal Kedokteran Dan Kesehatan - Fakultas Kedokteran Universitas Islam Sumatera Utara* 22(1):29–37. doi: 10.30743/ibnusina.v22i1.305.

Tumanggor, Sarah Diva, Lucia Aktalina, and Anna Yusria. 2022. "Karakteristik Pasien Hipertensi Di Puskesmas Mandala Kecamatan Medan Tembung." *Jurnal Kedokteran STM (Sains Dan Teknologi Medik)* 5(2):174–80. doi: 10.30743/stm.v5i2.343.